

METHOD AND APPARATUS FOR MEASURING  
AND ORIENTING GOLF CLUB SHAFT

Abstract of the Disclosure

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[0155] The preferred orientation, or planar  
5 oscillation plane, of a golf club shaft is located by  
measuring the oscillation of the shaft when an impulse  
is applied. Preferably, the out-of-plane oscillation  
is measured at a large number of angular positions  
about the shaft axis, and the principal planar  
10 oscillation plane is identified by that pair of opposed  
angular positions in which the out-of-plane oscillation  
is smallest. The location of the preferred orientation  
may be marked on the shaft and used to assemble a golf  
club with the planar oscillation plane in a  
15 predetermined orientation. The straightness of the  
shaft can also be determined by deriving its spring  
constant from its oscillation frequency and then  
measuring the restoring force when the shaft is  
deflected by the same nominal amount at different  
20 angular positions; differences in restoring force can  
be attributed to differences in actual deflection  
distance resulting from lack of straightness.